

if said register length of said calling program is greater than said register length of said called program,

at compile time, selecting a first linkage service program which assigns a first location to store a least significant portion of an entirety of register contents associated with said call and a second location to store a most significant portion of said entirety of register contents, saves said least significant portion at said first location and said most significant portion at said second location, passes to said called program an identity of said first location such that said called program will access and process said least significant portion but not said most significant portion, and invokes said called program, and

at compile time, generating executable code to invoke said first linkage service program, and

if said register length of said calling program is less than said register length of said called program,

at compile time, selecting a second linkage service program which assigns a third location to store said entirety of register contents, saves said entirety of register contents at said third location, passes to said called program an identity of said third location such that said called program will access and process said entirety of register contents, and invokes said called program, and

at compile time, generating executable code to invoke said second linkage service program.

42.(New) A method as set forth in claim 41 wherein, at compile time, further comprising the step of generating an executable form of said first linkage service program and said second linkage service program.

43.(New) A method as set forth in claim 41 wherein if said register length of said calling program is greater than said register length of said called program, said length of said least significant portion equals said length of registers of said called program.

44.(New) A method as set forth in claim 41 wherein said compiling is assembling.

45.(New) A method as set forth in claim 41 further comprising the step of executing at run time the selected linkage service program.

46.(New) A compiling system to process a call from a calling program to a called program, said system comprising:

means, at compile time, for comparing a register length of said calling program to a register length of said called program; and

means, responsive to said register length of said calling program being greater than said register length of said called program,

at compile time, for selecting a first linkage service program which assigns a first location to store a least significant portion of an entirety of register contents associated with said call and a second location to store a most significant portion of said entirety of register contents, saves said least significant portion at said first location and said most significant portion at said second location, passes to said called program an identity of said first location such that said called program will access and process said least significant portion but not said most significant portion, and invokes said called program, and

at compile time, for generating executable code to invoke said first linkage service program, and

means, responsive to said register length of said calling program being less than said register length of said called program,

at compile time, for selecting a second linkage service program which assigns a third location to store said entirety of register contents, saves said entirety of register contents at said third location, passes to said called program an identity of said third location such that said called program will access and process said entirety of register contents, and invokes said called program, and

at compile time, for generating executable code to invoke said second linkage service program.

47.(New). A system as set forth in claim 46 further comprising means, at compile time, for generating an executable form of said first linkage service program and said second linkage service program.

48.(New) A system as set forth in claim 46 wherein if said register length of said calling program is greater than said register length of said called program, said length of said least significant portion equals said length of registers of said called program.

49.(New) A system as set forth in claim 46 wherein said compiling is assembling.

50.(New) A system as set forth in claim 46 further comprising means for executing at run time the selected linkage service program.

51.(New) A computer program product for compiling to process a call from a calling program to a called program, said computer program product comprising:

a computer readable medium;

first program instructions, operable at compile time, to compare a register length of said calling program to a register length of said called program; and

second program instructions, responsive to said register length of said calling program being greater than said register length of said called program,

operable at compile time, to select a first linkage service program which assigns a first location to store a least significant portion of an entirety of register contents associated with said call and a second location to store a most significant portion of said entirety of register contents, saves said least significant portion at said first location and said most significant portion at said second location, passes to said called program an identity of said first location such that said called program will access and process said least significant portion but not said most significant portion, and invokes said called program, and

operable at compile time, to generate executable code to invoke said first linkage service program, and

third program instructions, responsive to said register length of said calling program being less than said register length of said called program,

operable at compile time, to select a second linkage service program which assigns a third location to store said entirety of register contents, saves said entirety of register contents at said third location, passes to said called program an identity of said third location such that said called program will access and process said entirety of register contents, and invokes said called program, and

operable at compile time, to generate executable code to invoke said second linkage service program; and wherein

said first, second and third program instructions are stored on said medium.

52.(New) A computer program product as set forth in claim 51 further comprising fourth program instructions, operable at compile time, to generate an executable form of said first linkage service program and said second linkage service program; and wherein said fourth program instructions are stored on said medium.

53.(New) A computer program product as set forth in claim 51 wherein if said register length of said calling program is greater than said register length of said called program, said length of said least significant portion equals said length of registers of said called program.

54.(New) A computer program product as set forth in claim 51 wherein said compiling is assembling.

55.(New) A computer program product as set forth in claim 51 further comprising fourth program instructions to execute at run time the selected linkage service program; and wherein said fourth program instructions are stored on said medium.